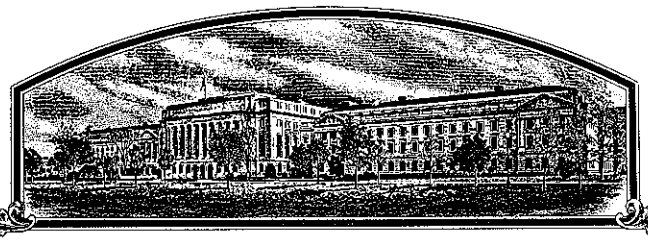
No. 9300203



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

FFR Cooperative

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'FFR 500'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 31st *day of* October *in the year of our Lord one thousand nine hundred and* ninety-five.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*: FFR COOPERATIVE

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.: X38091

3. VARIETY NAME: FFR 500

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*: 4112 East State Road 225
West Lafayette, IN 47906

5. PHONE *(include area code)*: 317/567-2115

FOR OFFICIAL USE ONLY

PVPO NUMBER: 9300203

FILING Date: April 29, 1993

Time: ☐ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $2325
Date: Apr. 23 1993
Certificate Fee: $275.00
Date: Sept. 6, 1995

6. GENUS AND SPECIES NAME: Glycine max

7. FAMILY NAME *(Botanical)*: Leguminosae

8. CROP KIND NAME *(Common Name)*: Soybean

9. DATE OF DETERMINATION: April, 1987

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*: Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION: Wisconsin

12. DATE OF INCORPORATION: 1960

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Lloyd McCall
FFR COOPERATIVE
Route 1, Box 78
Bells, TN 38006
PHONE *(Include area code)*: 901/668-2711

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. [X] Exhibit A, Origin and Breeding History of the Variety.
b. [X] Exhibit B, Novelty Statement.
c. [X] Exhibit C, Objective Description of Variety.
d. [X] Exhibit D, Additional Description of Variety.
e. [X] Exhibit E, Statement of the Basis of Applicant's Ownership
f. [X] Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office: April 22, 1993
g. [X] Filing and Examination Fee ($2,160) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
☐ YES *(If "YES," answer items 16 and 17 below)* ☒ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act Give date: _____ *)*
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES (If "YES," give names of countries and dates) Offered for sale in the United States during May, 1992
☐ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
L R Bell	Pres	4-20-93
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE

Exhibit A. Origin and Breeding History of the Variety

Pedigree: FFR 561 x Asgrow A5474

"FFR 500" was derived in 1986 as a single plant selection from the F4 generation of a cross that was made in 1983 near Jackson, TN. A modified single seed descent breeding method was used to advance the segregating generations. Seed from the F4 plant selection was grown during 1987 in a single row observation plot near Jackson, TN.

FFR 500, identified as experimental 38091, was first tested in a replicated trial in 1988 at three locations. In 1989, the line was advanced to the elite trials and testing was expanded to nine locations. Elite testing continues to the present time.

Purification began during the winter of 1988-89 when experimental 38091 was screened for resistance to the Soybean Cyst Nematode (Heterodera glycines) race 4. The plants that rated resistant were transplanted in the greenhouse and fruited. The seed from these plants was grown in a plant row during 1989 and screened for resistance to Stem Canker (Diaporthe phaseolorum var. caulivora). Uniform rows were harvested and bulked to form the original Breeder seed. This seed was increased in a winter nursery in 1989-90, brought back to Jackson, TN, and increased further in the 1990 season. Production continues to the present time.

FFR 500 appears stable and uniform from the 1989 plant rows through the present during our testing and seed increase program. Flower color, pubescence, and hilum color off-types have appeared at a frequency of up to 1% in the past. The variety is essentially free of contaminates at the present time.

Exhibit B. Novelty Statement

"FFR 500 is most similar to "FFR 561"; however, the varieties differ in the following characteristics:

TRAIT	VARIETY	
	FFR 500	FFR 561
Days to Maturity	125	134
Lodging score	1.1	1.6
Plant height (cm)	68.3	86.1
Leaflet width (cm)	6.8	7.5
Leaflet length (cm)	11.8	13.2
G/100 seed	13.2	13.6
Soybean cyst nematode race 3	Res.	Sus.
Soybean cyst nematode race 4	Res.	Sus.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
FFR COOPERATIVE	X38091	FFR 500

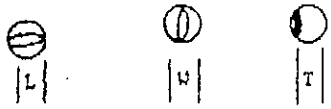
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
4112 East State Road 225
West Lafayette, IN 47906

FOR OFFICIAL USE ONLY
PVPO NUMBER
9300203

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2).
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

[1][4] Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

[1] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ 6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

[ ] 1 = Low 2 = High Segregating at approximately 1 high : 1 low

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

[2] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ 9. HYPOCOTYL COLOR:

[1] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

9300203

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ 13. FLOWER COLOR:

[1] 1 = White 2 = Purple 3 = White with purple throat

★ 14. POD COLOR:

[1] 1 = Tan 2 = Brown 3 = Black.

★ 15. PLANT PUBESCENCE COLOR:

[1] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[3] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ 17. PLANT HABIT:

[1] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

[0][8] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [0] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)*

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [0] Brown Stem Rot *(Cephalosporium gregatum)*

[2] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

9300203

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum var; sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma var. sojae)*

★ [0] Race 1 [2] Race 2 [0] Race 3 [2] Race 4 [0] Race 5 [0] Race 6 [1] Race 7

[0] Race 8 [0] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virut)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [2] Race 3 [2] Race 4 [1] Other *(Specify)* Race 5

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [1] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify)*: _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [0] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Coker 425	Seed Coat Luster	FFR 561
Leaf Shape	FFR 561	Seed Size	FFR 561
Leaf Color	FFR 561	Seed Shape	FFR 561
Leaf Size	FFR 561	Seedling Pigmentation	FFR 561

9300203

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted FFR 500	125.	1.1	68.3	6.8	11.8	40.2	20.1	13.2 g.	
FFR 561 Name of Similar Variety	134	1.6	86.1	7.5	13.2	40.7	20.5	13.6 g.	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Exhibit D. Additional Description of the Variety

"FFR 500" is a determinate, early maturity group V soybean variety. It has white flowers, gray pubescence, tan pods, yellow seed coats, and buff hilum. It is resistant to the Soybean Cyst Nematode (Heterodera glycines) races 3 and 4, Stem Canker (Diaporthe phaseolorum var. caulivora), and Phytophthora Root Rot (Phytophthora megasperma var. sojae) races 2 and 4. It is susceptible to Soybean Cyst Nematode race 5, Phytophthora Root Rot race 7, and the Southern Root Knot Nematode (Meloidogyne incognita).

8

Amended Exhibit E. Statement of the Basis of Applicant's Ownership.

"FFR 500" was bred and developed by a number of plant breeders employed by FFR Cooperative. No rights to the variety were retained by employees. FFR Cooperative is the sole owner of this soybean variety.